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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/817,467

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Christopher F. Lyons

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02/24/2006

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EXAMINER

LEWIS, MONICA

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/817,467	<b>Applicant(s)</b> LYONS, CHRISTOPHER F.	
	<b>Examiner</b> Monica Lewis	<b>Art Unit</b> 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This office action is in response to the election filed January 3, 2006.

#### ***Election/Restrictions***

2. Applicant's election with traverse of Embodiment I in the reply filed on 1/3/06 is acknowledged. The traversal is on the ground(s) that "claim 1 is generic to the species." This is not found persuasive because claim 1 is not generic to claim 10. Claim 1 is generic to claim 17. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a). Finally, note a proper response to a genus/species restriction is the submission of evidence or the identification of such evidence showing the species to be obvious variants or clearly admit on the record that this is the case.

The requirement is still deemed proper and is therefore made FINAL.

#### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because of the following: a) reference character "308" has been used to designate both polymer dielectric and STI (For Example: See Page 14 Line 31 and Page 154 Line 2); b) reference character "322" has been used to designate both a second polymer dielectric and SLD (For Example: See Page 15 Line 10); c) reference character "324" has been used to designate both a third polymer dielectric and SLD (For Example: See Page 15 Line 25); and d) reference character "326" has been used to designate both a fourth polymer dielectric and ILD (For Example: See Page 15 Line 22).

Art Unit: 2822

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oglesby et al. (U.S. Patent No. 6,656,763) in view of Farrar (U.S. Patent No. 6,838,764).

In regards to claim 1, Oglesby et al. ("Oglesby") discloses the following:

a) at least one active device (104) comprising an organic semiconductor material and a passive layer (For Example: See Column 4 Lines 20-24).

In regards to claim 1, Oglesby fails to disclose the following:

a) a polymer dielectric over a substrate.

However, Farrar discloses a polymer dielectric (106) over a substrate (103) (For Example: See Figure 1). It would have been obvious to one having ordinary skill in the art at the

Art Unit: 2822

time the invention was made to modify the semiconductor of Oglesby to include a polymer dielectric over a substrate as disclosed in Farrar because it aids in preventing increased capacitive coupling (For Example: See Column 1 Lines 13-61).

Additionally, since Oglesby and Farrar are both from the same field of endeavor, the purpose disclosed by Farrar would have been recognized in the pertinent art of Oglesby.

In regards to claim 2, Oglesby fails to disclose the following:

a) the polymer dielectric comprises at least one selected from the group consisting of polyimides, fluorinated polyimides, polysilsequioxanes such as hydrogen polysilsequioxanes, methyl polysilsequioxanes, butyl polysilsequioxanes, and phenyl polysilsequioxanes, benzocyclobutenes (BCB), fluorinated benzocyclobutene, polyphenylene, polysilazanes, polyphenylquinoxaline, copolymers of 2,2-bis(trifluoromethyl)-4,5-difluoro-1,3-dioxole, perfluoroalkoxy resin, fluorinated ethylene propylene, fluoromethacrylate, poly(arylene ether), fluorinated poly(arylene ether), fluorinated parylenes, poly(p-xylxylenes), fluorinated poly(p-xylxylenes), parylene F, parylene N, parylene C, parylene D, amorphous polytetrafluoroethylene, polyquinoline, polyphenylquinoxalines, and polymeric photoresist materials.

However, Farrar discloses the use of polyimide (For Example: See Column 3 Lines 12 and 13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Oglesby to include polyimide as disclosed in Farrar because it aids in preventing increased capacitive coupling (For Example: See Column 1 Lines 13-61).

Additionally, since Oglesby and Farrar are both from the same field of endeavor, the purpose disclosed by Farrar would have been recognized in the pertinent art of Oglesby.

In regards to claim 3, Oglesby fails to disclose the following:

a) the polymer dielectric comprises a self patternable material.

However, Farrar discloses a polymer dielectric (For Example: See Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to

Art Unit: 2822

modify the semiconductor of Oglesby to include a polymer dielectric as disclosed in Farrar because it aids in preventing increased capacitive coupling (For Example: See Column 1 Lines 13-61)(Note: Although Farrar fails to specifically disclose the limitations listed above, the same material is utilized in Farrar as in Applicant's invention therefore it would have the same characteristics.).

Additionally, since Oglesby and Farrar are both from the same field of endeavor, the purpose disclosed by Farrar would have been recognized in the pertinent art of Oglesby.

In regards to claim 4, Oglesby fails to disclose the following:

a) the polymer dielectric has a glass transition temperature or a melting point of about 125° C. or higher and about 425° C. or less.

However, Farrar discloses a polymer dielectric that has a glass transition temperature or a melting point of about 125° C. or higher and about 425° C. or less (For Example: See Column 3 Lines 32-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Oglesby to include a polymer dielectric that has a glass transition temperature or a melting point of about 125° C. or higher and about 425° C. or less as disclosed in Farrar because it aids in preventing increased capacitive coupling (For Example: See Column 1 Lines 13-61).

Additionally, since Oglesby and Farrar are both from the same field of endeavor, the purpose disclosed by Farrar would have been recognized in the pertinent art of Oglesby.

In regards to claim 5, Oglesby fails to disclose the following:

a) the polymer dielectric has a dielectric constant below about 3.

Art Unit: 2822

However, Farrar discloses a polymer dielectric that has a dielectric constant below about 3 (For Example: See Column 7 Lines 56-58). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Oglesby to include a polymer dielectric that has a dielectric constant below about 3 as disclosed in Farrar because it aids in preventing increased capacitive coupling (For Example: See Column 1 Lines 13-61).

Additionally, since Oglesby and Farrar are both from the same field of endeavor, the purpose disclosed by Farrar would have been recognized in the pertinent art of Oglesby.

In regards to claim 6, Oglesby discloses the following:

a) a conductive polymer (For Example: See Column 3 Line 48).

In regards to claim 7, Oglesby discloses the following:

a) the organic semiconductor material comprises at least one selected from the group consisting of polyacetylene; polydiphenylacetylene; poly(t-butyl)diphenylacetylene; poly(trifluoromethyl)diphenylacetylene; polybis(trifluoromethyl)acetylene; polybis(tbutyldiphenyl)acetylene; poly(trimethylsilyl) diphenylacetylene; poly(carbazole)diphenylacetylene; polydiacetylene; polyphenylacetylene; polypyridineacetylene; polymethoxyphenylacetylene; polymethylphenylacetylene; poly(t-butyl)phenylacetylene; polynitro-phenylacetylene; poly(trifluoromethyl) phenylacetylene; poly(trimethylsilyl)pheylacetylene; polydipyrrylmethane; polyindoquinone; polydihydroxyindole; polytrihydroxyindole; furanepolydihydroxyindole; polyindoquinone-2-carboxyl; polyindoquinone; polybenzobisthiazole; poly(p-phenylene sulfide); polyaniline; polythiophene; polypyrrole; polysilane; polystyrene; polyfuran; polyindole; polyazulene; polyphenylene; polypyridine; polybipyridine; polyphthalocyanine; polysexithiofene; poly(siliconoxohemiporphyrzine); poly(germaniumoxohemiporphyrzine); poly(ethylenedioxythiophene); polymetallocene complexes; and polypyridine metal complexes (For Example: See Column 5 Lines 13-24).

In regards to claim 8, Oglesby discloses the following:

a) the passive layer comprises at least one selected from the group consisting of copper sulfide, copper rich copper sulfide, copper oxide, copper selenide, copper telluride, manganese oxide, titanium dioxide, indium oxide, silver sulfide, gold sulfide, iron oxide, cobalt arsenide, and nickel arsenide (For Example: See Column 11 Lines 58-65).

Art Unit: 2822

In regards to claim 9, Oglesby discloses the following:

a) one active device comprises a first and a second electrode (106 and 108), a passive layer adjacent the first electrode, and the organic semiconductor material adjacent the second electrode (For Example: See Figure 1).

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ML

February 20, 2006

A handwritten signature in black ink, consisting of stylized, overlapping loops and a long horizontal stroke at the end.